Singleton with Prior PTB

The strongest predictor of preterm birth (PTB) is a prior spontaneous preterm birth (sPTB). Spontaneous preterm birth (sPTB) recurs in 35-50% of women, and tends to recur at similar gestational ages. Likewise, the probability of sPTB recurrence increases with the number of prior sPTBs a woman has experienced, the most recent birth being the most predictive.

Women with a prior sPTB 16-36 weeks of gestation should be offered empiric prophylactic treatment with weekly intramuscular progesterone therapy (17-alpha hydroxyprogesterone caproate).

- **When should 17P be initiated, and when should it be discontinued?**
  - The initial dose of 17P should be started at 16 weeks of gestation, optimally.
  - 17P should be given every week.
  - 17P should be continued through 36 weeks of gestation. Early termination of 17P is associated with an elevated risk of PTB in the time period after discontinuation.

- **Special situations:**
  - Although women with a history of sPTB of a twin or triplet gestation are at higher risk of sPTB in a subsequent singleton pregnancy, the efficacy of 17P among women with this pregnancy history is uncertain.
  - Initiation of 17P at 16 weeks of gestation is optimal. However, when women present late to care and are candidates for 17P, late initiation of treatment may still be efficacious in reducing the recurrence of PTB. Prophylaxis with 17P should not be withheld if a woman presents to care before 28 weeks of gestation.

Women with a prior sPTB 16-36 weeks of gestation should undergo cervical length (CL) screening via transvaginal ultrasound (TVU)

- **When should the first TVU CL be obtained?**
  - The initial TVU CL should be obtained at around 16 weeks of gestation.
  - Consider earlier measurement only in the uncommon circumstances of very early or recurrent PTB or history suggestive of cervical insufficiency.

- **How to accurately obtain a TVU CL**
  - Ideally measurements are obtained via TVU, following CLEAR guidelines.
  - The cervix should be observed for 3-5 minutes.
  - 3 measurements should be obtained; the best, shortest measurement should be used.
  - The presence/absence of cervical funneling, dynamic changes in response to gentle fundal pressure, and amniotic sludge/debris can be recorded as applicable, but CL is used mostly for management.

- **What cervical length is considered abnormal?**
o Prior to 25 weeks of gestation, a cervical length measurement <25mm is considered less than the 10th centile and is considered short.

- **Retesting**
  - Serial CL measurements should be obtained every 2 weeks until 24 weeks of gestation; or every week if TVU CL is 26-29mm.

- **Treatment**
  - Women found to have a CL ≤25mm can be evaluated clinically on labor and delivery for the presence of labor, intraamniotic infection, and cervical dilation.
  - If less than 24 weeks of gestation and a short CL ≤25mm is detected, the woman should be offered an ultrasound indicated cerclage.

- **Special situations:**
  - Because the rate of CL change is associated with PTB, a CL that has noted to shorten considerably between measurements may warrant closer follow-up (e.g., re-scan in one week rather than two weeks), even if the most recent CL is normal.
  - Women found to have a short cervix should continue 17P prophylaxis. Although there is limited information regarding the efficacy of 17P in this setting, there remains potential benefit.

### Summary of Care for Women with Singleton Gestations and Prior PTB

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<th>Gestational Age</th>
<th>Evaluation</th>
<th>Treatment</th>
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| **<16 weeks of gestation** | - Detailed obstetric history  
- Urine culture | - Treat bacteriuria if test results positive  
- Consider history-indicated cerclage if indicated by history (e.g. three or more second trimester losses and/or early sPTBs) |
| **16-23 weeks of gestation** | - TVU CL; repeat q2 weeks, or q1 week if TVU CL 26-29mm  
- Assess 17P compliance if applicable  
- Urinalysis with culture as indicated | - Initiate 17-alpha hydroxyprogesterone caproate weekly  
- If TVU reveals short CL≤25mm:  
  - Offer ultrasound indicated cerclage |

This algorithm and key driver material was written by a group of experts in the field of Preterm Birth. It was then reviewed by the Society for Maternal-Fetal Medicine’s (SMFM’s) Publications Committee, Executive Committee and Risk Management.

Standardization of healthcare processes and reduced variation has been shown to improve outcomes and quality of care. SMFM developed these documents to help facilitate the standardization process. These algorithms and key driver documents are “tools” to assist clinicians and practices. The practice of medicine continues to evolve, and individual circumstances may vary. They reflect clinical and scientific advances as of the date issued and are subject to change. They are not intended to dictate a certain management or course of action. We encourage users to adapt them to their particular situation, environment and patient population.

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